

① The sum of twice a number n
and 8 is at most 25

$$2n + 8 \leq 25$$

is at most = could be 25 or any # less than 25

② The temperature t is at least 75

$$t \geq 75$$

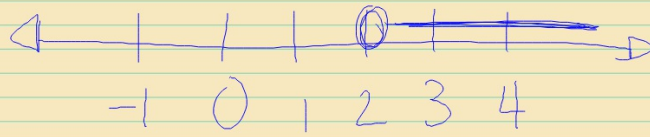
is at least = could be 75° or greater

③ The cost of a ticket t will
be no more than $\$26$.

$$t \leq 26$$

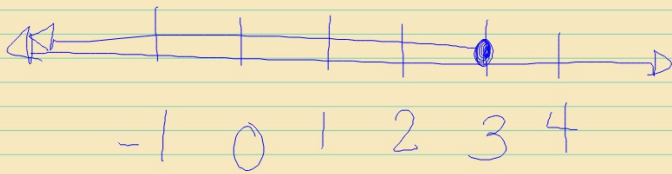
could be $\$26$ or less than

4.)



$$x > 2$$

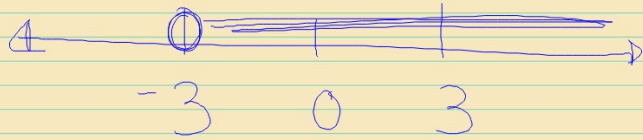
⑤



$$x \leq 3$$

$$\begin{array}{r} -9 < m = \cancel{6} \\ +6 \quad \quad \quad \cancel{+6} \end{array}$$

$$-3 < m$$

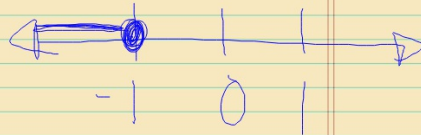


$$\begin{array}{r} -3z \geq 6 + 3z \\ -3z \qquad \qquad -3z \end{array}$$

divide
by negative
switch
sign

$$\begin{array}{r} -6z \geq 6 \\ \hline -6 \qquad -6 \end{array}$$

$$z \leq -1$$



$$1m \geq 5m - 4$$

$$-5m \quad -5m$$

$$\frac{-4m}{-4} \geq \frac{-4}{-4}$$

$$m \leq 1$$

divide
by (-)
switch
sign

$$\frac{x}{4} + 6 \leq x + 8$$

~~-6~~ ~~-6~~

$$4 \left(\frac{x}{4} \right) \leq (x + 2) \cdot 4$$

$$x \leq 4x + 8$$

~~-4x~~ ~~-4x~~

Divide (-)
Switch
Sign

$$\frac{-3x}{-3} \leq \frac{8}{-3} \quad x \geq -\frac{8}{3}$$

$$\frac{1}{2}h + 2 \geq \frac{1}{2}(h + 8)$$

1st Distribute

$$\frac{1}{2}h + 2 \geq \frac{1}{2}h + 4$$
$$\cancel{\frac{1}{2}h} + 2 \geq \cancel{\frac{1}{2}h} + 4$$

All variables cancel

No Solution

$$2 \geq 4 \quad (2 \text{ is not greater than or equal to } 4)$$

$$4k - (3 + 3k) > 2$$

① Distribute
(-) sign

$$\underline{4k} - 3 - \underline{3k} > 2$$

② combine
Like terms

$$k - 3 > 2$$
$$+3 \quad +3$$

③ Solve for k

$$k > 5$$

$$4n+3 < \underline{6n+8-2n}$$

① combine
like terms
on each side

$$\begin{array}{r} \cancel{4n}+3 < \cancel{4n}+8 \\ -4n \quad -4n \end{array}$$

$$3 < 8 \quad \leftarrow$$

All real #'s

variables
cancel out
leaves a
true statement

$$10 - 2(3x - 1) > 6x + 10$$

① Distribute $\underline{10} - 6x + \underline{2} > 6x + 10$

② Like terms $12 - 6x > 6x + 10$
+6x +6x

$$12 > 12x + 10$$
$$\begin{array}{r} -10 \\ 2 > 12x \\ \hline 12 \end{array} \quad \begin{array}{r} -10 \\ \hline 12 \end{array} \quad \frac{1}{6} > x$$

Divide
(-)
switch
sign

$$\begin{array}{r} -3y > 9 \\ \hline -3 \quad -3 \\ \hline y < -3 \end{array}$$

or

$$\begin{array}{r} 2y - 6 > 2 \\ \hline +6 \quad +6 \\ \hline 2y > 8 \\ \hline y > 4 \end{array}$$



$$-1 < c + 2 < 3$$

$$-1 < c + 2$$

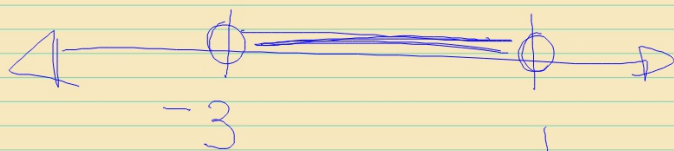
$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$-3 < c$$

$$c + 2 < 3$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$c < 1$$



$$-3 < c < 1$$

$$2a+1 < 11 \text{ or } a < 3a-12$$

$$-1 \quad -1$$

$$2a < \frac{10}{2}$$

$$a < 5$$

$$\begin{array}{l} \text{switch} \\ \downarrow \\ -3a = -3a \end{array}$$

$$\underline{-2a} < \underline{-12}$$

$$\underline{-2} \quad \underline{-2}$$

$$a > 6$$

$$32 > 16 - 4g > 12$$

$$32 > 16 - 4g$$

$-16 \quad -16$

$$\frac{16}{-4} > \frac{-4g}{-4}$$

$$-4 < g$$

switch
divide
by (-)

$$16 - 4g > 12$$

$-16 \quad -16$

$$\frac{-4g}{-4} > \frac{-4}{-4}$$

$$g < 1$$

$$-4 < g < 1$$

$$|2x-6| < 0$$

No Solution

can not put a number in for
x to be absolute value
less than 0

$$|7-2y| - 8 \geq -3$$

+8 +8

① simplify equation

$$|7-2y| \geq 5$$

$$7-2y \geq 5$$

switch ↙

$$\begin{array}{r} -7 \\ -2y \geq -2 \\ \hline -2 \quad -2 \end{array}$$

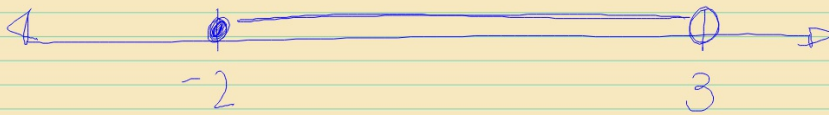
$$y \leq 1$$

$$7-2y \leq -5$$

switch ↘

$$\begin{array}{r} -7 \\ -2y \leq -12 \\ \hline -2 \quad -2 \end{array}$$

$$y \geq 6$$





At least 500 words = ≥ 500
have written = + 285

$$\begin{array}{r} W + 285 \geq 500 \\ - 285 \\ \hline W \geq 215 \end{array}$$

need at least 30 $= \geq 30$

each bag 2.5 $= 2.5b$

$b =$ bags (we don't know how many?)

$$2.5b \geq 30$$

$$\text{Cost } 180 = -180$$

$$\$4 \text{ per ticket} = 4t$$

$$\text{profit of at least } 500 = \geq 500$$

$$4t - 180 \geq 500$$

$$t \geq 170$$

at most 115 = ≤ 115

saved \$30 = +30

7.50 per hour = $7h$

$$30 + 7.50h \leq 115$$

$$h \leq 11 \frac{1}{3}$$

